



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/072,417	02/05/2002	Joseph M. Brand	MI22-1939	4224
21567	7590	10/05/2004	EXAMINER	
WELLS ST. JOHN P.S. 601 W. FIRST AVENUE, SUITE 1300 SPOKANE, WA 99201			FORDE, REMMON R	
			ART UNIT	PAPER NUMBER
			2826	

DATE MAILED: 10/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/072,417	BRAND, JOSEPH M.	
	Examiner Remmon R. Fordé	Art Unit 2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 23 June 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 41-74 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 41-74 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date: _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 48-50 in correspondence dated 6/23/2004 have been considered but are moot in view of the new ground(s) of rejection.

In addition, the indicated allowability of claims 41-47 and 53-70 in the previous Examiner's correspondence dated 3/23/2004 is withdrawn in view of the newly discovered reference(s) to Wills et al. (US PN 5,847,467). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 41-74 are rejected under 35 U.S.C. 102(e) as being anticipated by Wills et al..

Regarding claims 41 and 44-47, referencing Figures 3 and 4, Wills et al. discloses a package device provided with a semiconductor die (14); a heat sink (32 &

Art Unit: 2826

16) thermally coupled with the semiconductor die; and a housing (30 & 34) encapsulating at least a portion of the heat sink and positioned substantially between an entirety of the heat sink and the semiconductor die. (Column 3, line 48 – Column 4, line 26.)

Regarding claim 42, referencing Figures 3 and 4, Wills et al. further discloses providing at least one lead (20) coupled with the semiconductor die (14) and the housing (30 & 34) encapsulates at least a portion of the at least one lead (20).

Regarding claim 43, referencing Figures 3 and 4, Wills et al. further discloses that the heat sink is provided with a body (16); and at least one lead (20) coupled with the body (16) and configured to dissipate heat from the semiconductor die externally of the housing.

Regarding claims 48-50 and 69-74, referencing Figures 3 and 4, Wills et al. further discloses a package device provided with a semiconductor die (14); a housing (30 & 34) enclosing the semiconductor die; a heat sink (32 & 16) positioned in heat-receiving relation with the semiconductor die and comprising at least one heat dissipation lead (20) extending outward of the housing and configured to release heat outside the housing; at least one electrical lead (20) electrically coupled with the semiconductor die and extending outward of the housing; and wherein the heat dissipation lead and the electrical lead extend outward of the housing within different planes at a surface of the housing. (Column 3, line 48 – Column 4, line 26.)

Regarding claims 51 and 52, referencing Figures 3 and 4, Wills et al. further discloses that the housing (30 & 34) comprises a first housing (30) enclosing the

semiconductor die (14) and a second housing (34) enclosing the first housing (30) and at least partially enclosing the heat sink (32 & 16).

Regarding claims 53-55, 58, 59, 60-65 and 68, referencing Figures 3 and 4, Wills et al. further discloses a package device provided with a first lead frame (20); a semiconductor die (14) secured to the first lead frame; a second lead frame (20) comprising a heat sink (16) thermally coupled with the semiconductor die; and a housing (30 & 34) formed about at least portions of the semiconductor die and heat sink. (Column 3, line 48 – Column 4, line 26.)

Regarding claims 56, 57, 66 and 67, referencing Figures 3 and 4, Wills et al. further discloses that the housing (30 & 34) is configured to provide portions of the first lead frame and second lead frame outwardly exposed relative to the housing.

Relevant Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nakajima, Hirakawa et al., Kim, Burns, McIver and Choi each disclose semiconductor package devices.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Remmon R. Fordé whose telephone number is (571) 272-1916. The examiner can normally be reached on Monday-Thursday (8:00-6:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J. Flynn can be reached on (571) 272-1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Remmon R. Fordé



NATHAN J. FLYNN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800